Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the Application:

Listing of Claims:

1. (Previously presented) A joint resistant to fluid leakage, which joint comprises:

a girdle of a metallic material capable of undergoing deformation without rupture,

a first rigid member with a tapered outer mating surface, and

a second rigid member with a tapered inner mating surface,

the girdle being disposed between and contiguous with the tapered mating surface of the first rigid member and the tapered inner mating surface of the second rigid member, wherein differential pressure across the joint provides compressive force upon the girdle through the mating surfaces thereby improving resistance to fluid leakage through the joint.

2. (Original) The joint according to claim 1 wherein the first rigid member comprises a nonmetallic material selected from the group consisting of glass, porcelain, and ceramic, and the second rigid member comprises a high strength metallic material capable of being welded, and the members exhibit different coefficients of thermal expansion.

3. (Original) The joint according to claim 1 wherein the girdle has a monolithic structure that undergoes plastic deformation thereby improving resistance to fluid leakage through the joint.

4. (Previously presented) The joint according to claim 1 wherein the first rigid member includes a ceramic material comprising a crystalline mixed metal oxide which exhibits, at operating temperatures, electron conductivity, oxygen ion conductivity, and ability to separate oxygen from a gaseous mixture containing oxygen and one or more other components by means of the electron conductivity and oxygen ion conductivity of the crystalline mixed metal oxide.

5. (Previously presented) The joint according to claim 4 wherein the first rigid member has a tubular structure closed at one end with the tapered outer mating surface at a distal end of the first rigid member which tapered outer mating surface is contiguous with a portion of the girdle.

6. (Original) The joint according to claim 5 wherein the girdle has a monolithic structure comprising a metallic material that has undergone plastic deformation thereby improving resistance to fluid leakage through the joint.

7. (Previously presented) A joint resistant to fluid leakage, which joint comprises:

a first rigid member which has a tubular structure closed at one end with a tapered outer surface at a distal end thereof comprising a nonmetallic material selected from the group consisting of glass, porcelain, and ceramic;

a girdle which has a tapered inner surface adapted to support the tapered outer surface of the first member, the girdle comprising a metallic material capable of undergoing deformation without rupture; and

a second rigid member which has an orifice adapted to support the girdle, the second rigid member comprising a high strength metallic material capable of being welded,

wherein a differential pressure across the joint provides compressive force upon the girdle.

8. (Previously presented) The joint according to claim 7 wherein the nonmetallic material of the first rigid member and the high strength metallic material of the second rigid member exhibit different coefficients of thermal expansion.

9. (Previously presented) The joint according to claim 8 wherein the first rigid member includes a dense ceramic material comprising a crystalline mixed metal oxide which exhibits, at operating temperatures, electron conductivity, oxygen ion conductivity, and ability to separate oxygen from a gaseous mixture containing oxygen and one or more other components

by means of the electron conductivity and oxygen ion conductivity of the crystalline mixed metal oxide.

10. (Original) The joint according to claim 7 wherein the girdle has a monolithic structure that undergoes plastic deformation thereby improving resistance to fluid leakage through the joint.

11. (Previously presented) A joint resistant to fluid leakage, which joint comprises:

a girdle having a monolithic structure and comprising a material capable of undergoing deformation without rupture,

a conduit comprising a metallic material capable of being welded and having an inner tapered surface at a distal end thereof adapted to mate with an outer surface of the girdle, and

a hollow ceramic member having at least one opening for flow communication with the conduit and an outer tapered surface adjacent to the opening adapted to mate with an inner surface of the girdle,

wherein a differential pressure across the joint provides compressive force upon the girdle through the mating of the inner surface of the girdle with the outer tapered surface of the hollow ceramic member and the mating of the outer surface of the girdle with the inner tapered surface of the conduit.

12. (Canceled).

13. (Original) The joint according to claim 11 wherein the ceramic member comprises a crystalline mixed metal oxide composition selected from a class of materials that have an X-ray identifiable crystalline structure based upon the structure of the mineral perovskite, $CaTiO_3$.

14. (Original) The joint according to claim 11 wherein the conduit comprises a high temperature alloy of at least one metallic element selected from the group consisting of

aluminum, titanium, vanadium, chromium, iron, cobalt, nickel, molybdenum, and tungsten.

15. (Previously presented) The joint according to claim 11 wherein the girdle comprises at least one metallic element selected from the group consisting of aluminum, copper, zinc, palladium, silver, tin, antimony, platinum, gold, lead and bismuth.

16. (Previously presented) The joint according to claim 11 wherein the girdle is a composite which comprises graphite imbedded in a metallic material capable of undergoing plastic deformation without rupture, the girdle being disposed between and contiguous with the inner tapered surface of the conduit and the outer tapered surface of the ceramic member.

17. (Previously presented) The joint according to claim 11 wherein the girdle is a composite which comprises graphite with a coating of at least one metallic material capable of undergoing plastic deformation without rupture selected from the group consisting of palladium, silver, platinum and gold, the girdle being disposed to contact fluid on at least one side of the joint.

Claims 18-25 (Canceled).

26. (New) A joint resistant to fluid leakage, which joint comprises:

a girdle having a monolithic structure and comprising a composite material comprised of graphite and a metallic material capable of undergoing deformation without rupture,

a conduit comprising a metallic material capable of being welded and having an inner tapered surface at a distal end thereof adapted to mate with an outer surface of the girdle, and

a hollow ceramic member having at least one opening for flow communication with the conduit and an outer tapered surface adjacent to the opening adapted to mate with an inner surface of the girdle,

wherein a differential pressure across the joint provides compressive force upon the girdle through the mating of the inner surface of the girdle with the outer tapered surface of the hollow

ceramic member and the mating of the outer surface of the girdle with the inner tapered surface of the conduit.

27. (New) The joint according to Claim 26 wherein the girdle comprises graphite imbedded in the metallic material capable of undergoing plastic deformation without rupture, the girdle being disposed between and contiguous with the inner tapered surface of the conduit and the outer tapered surface of the ceramic member.

28. (New) The joint according to claim 26 wherein the girdle comprises graphite with a coating of the metallic material capable of undergoing plastic deformation without rupture selected from the group consisting of palladium, silver, platinum and gold, the girdle being disposed to contact fluid on at least one side of the joint.

29. (New) The joint according to claim 26 wherein the ceramic member comprises a crystalline mixed metal oxide which exhibits, at operating temperatures, electron conductivity, oxygen ion conductivity, and ability to separate oxygen from a gaseous mixture containing oxygen and one or more other components by means of the electron conductivity and oxygen ion conductivity of the crystalline mixed metal oxide.

30. (New) The joint according to claim 26 wherein the ceramic member and the metallic material of the conduit exhibit different coefficients of thermal expansion.

31. (New) The joint according to claim 26 wherein the ceramic member comprises a crystalline mixed metal oxide composition selected from a class of materials that have an X-ray identifiable crystalline structure based upon the structure of the mineral perovskite, $CaTiO_3$.

32. (New) The joint according to claim 26 wherein the conduit comprises a high temperature alloy of at least one metallic element selected from the group consisting of aluminum, titanium, vanadium, chromium, iron, cobalt, nickel, molybdenum, and tungsten.

33. (New) The joint according to claim 26 wherein the girdle comprises at least one metallic element selected from the group consisting of aluminum, copper, zinc, palladium, silver, tin, antimony, platinum, gold, lead and bismuth.